

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/019763

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> Int.Cl. <sup>7</sup> C12N15/11, C12Q1/68  According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) Int.Cl. <sup>7</sup> C12N15/11 - 15/62, C12Q1/68  Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WPI/BIOSIS(DIALOG), PUBMED, JSTPlus, GenBank/EMBL/DDBJ/GeneSeq		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	ARGUELLO R. et al., A novel method for simultaneous high resolution identification of HLA-A, HLA-B, and HLA-Cw alleles, Proc.Natl.Acad.Sci.USA (1996), Vol.93, p.10961-10965	1, 2, 4 3
A	BAROUCH D. et al., HLA-A2 subtypes are functionally distinct in peptide binding and presentation, J.Exp.Med.(1995), Vol.182, No.6, p.1847-1856	1 - 4
A	SHANKARKUMAR U. et al., Novel HLA Class I Alleles Associated with Indian Leprosy Patients, J.Biomed.Biotechnol.(2003/Aug), Vol.2003, No.3, p.208-211	1 - 4
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 13.04.2005		Date of mailing of the international search report 10.5.2005
Name and mailing address of the ISA/JP <b>Japan Patent Office</b> 3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan		Authorized officer <b>HAJIME KAMIJO</b> Telephone No. +81-3-3581-1101 Ext. 3448
		4B 9453

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	YAN C et al., HLA-A gene polymorphism defined by high-resolution sequence-based typing in 161 Northern Chinese Han people, Geno.Prot.Bioinfo. (2003/Nov), Vol.1, No.4, p.304-309	1 - 4
A	CARTER AS et al., Nested polymerase chain reaction with sequence-specific primers typing for HLA-A, -B, and -C alleles: detection of microchimerism in DR-matched individuals, Blood. (1999), Vol.94, No.4, p.1471-1477	1 - 4

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**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

See Extra Sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Claim 1-4 relevant to only a probe set comprising the probe No.0 in Table 1-1

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

**Continuation of Box No. III**

There are 1899 groups of inventions which is contained in claim 1-22: <Group 1-1899>each probe sets comprising at least one probe comprised a partial sequence in a sequence listed in Tables 1-1 to 28-2 that can be used for identification of an allele of specific HLA antigen gene (e.g. HLA-A)

The separate groups of inventions are not so linked as to form a single general inventive concept for the following reasons:

The same technical feature among the probe sets comprising at least one probe comprised a partial sequence in a sequence listed in Tables 1-1 to 28-2 that can be used for identification of an allele of specific HLA antigen gene (e.g. HLA-A) is "a probe set comprising probes that can be used for identification of a HLA allele".

However, "a probe set comprising probes that can be used for identification of HLA-A, HLA-B, and HLA-C alleles" is disclosed in the Table 1 of D1, and "a probe set comprising probes that can be used for identification of HLA-DP alleles" is disclosed in the claim 2 of D2, and "a probe set comprising probes that can be used for identification of HLA-A, and HLA-B alleles" is disclosed in the claim 12-17 of D3. So this feature is not new, and a contribution of this feature is not over the prior art.

And there are no other technical features which are the same or corresponding among the groups of inventions which is contained in the claims, and a contribution of those features are over the prior art.

Therefore there are no technical relationship which is considered as "special technical feature" (PCT rule 13.2) among the groups of claims.

D1: Proc. Natl. Acad. Sci. USA (1996), Vol. 93, p. 10961-10965  
D2: JP 6-78800 A (1994.03.22)  
D3: EP 540997 A1 (1992.10.28)